

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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Road, Wanchai, HONG KONG, P.R. China
CHINA PATENT AGENT (H.K.) LTD

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43 *bis*.1)

Date of mailing
(day/month/year)

28 OCT 2006 26 · 10 · 2006

Applicant's or agent's file reference
FPEL05150067

FOR FURTHER ACTION

see paragraph 2 below

International application No.
PCT/CN2005/002232

International filing date (day/month/year)
17. Dec 2005 (17.12.2005)

Priority date (day/month/year)

International Patent Classification (IPC) or both national classification and IPC
G06F9/45(2006.01)i

Applicant

INTEL CORPORATION et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CN
The State Intellectual Property Office, the
P.R.China 6 Xitucheng Rd., Jimen Bridge,
Haidian District, Beijing, China 100088
Facsimile No. 86-10-62019451

Date of completion of this opinion
16.Sep 2006 (16.09.2006)

Authorized officer

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITYInternational application No.
PCT/CN2005/002232

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed
☐ filed together with the international application in electronic form
☐ furnished subsequently to this Authority for the purposes of search

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CN2005/002232

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement:

Novelty (N)	Claims 1-20	YES
	Claims	NO
Inventive step (IS)	Claims 4-9,11-12,14-20	YES
	Claims 1-3,10,13	NO
Industrial applicability (IA)	Claims 1-20	YES
	Claims	NO

2. Citations and explanations

(1) Reference is made to the following documents:

- D1:US5524264A (Sony Corporation, Tokyo, Japan) 4 Jun 1996 (1996-06-04)
D2:US5642512A (Matsushita Electric Co., Osaka-fu, Japan) 24 Jun 1997 (1997-06-24)
D3:EP0363882A2 (NEC CORPORATION) 18 Apr 1990 (1990-04-18)
D4:JP200470439A (PANASONIC CORPORATION) 4 Mar 2004 (2004-03-04)

(2) Novelty and Inventive Step:

The subject matter of claims 1-20 of the present invention is a method of compiling code.

D1 discloses a parallel arithmetic-logical processing device. The data to be processed is divided into first data and second data by control means and supplied to a plurality of processing units so as to be parallel-processed by the processing unit. These processing units include first storage means and second storage means.

The subject matter of the present invention and that of the prior art document D1 are considered to be similar in that both relate to a compiling technique. But the claims 1-20 of the present invention relate to the invention based on memory access latency associated with the instructions. It is obvious that not all the technical features in claims 1-20 are disclosed by D1. Therefore, The claims 1-20 are considered to be novel (PCT Article 33(2)).

The difference between the said claims 1-3,10,13 and the said document lies in that the state of the bus structure in the said claims is the method based on memory access latency associated with the instructions. However, the said difference is well-known to the person skilled in the compiling code field. Accordingly, it would be obvious to a person skilled in the art to derive the invention of claims 1-3,10,13 from the prior art. Therefore, the claims 1-3,10,13 are considered to lack an inventive step (PCT Article 33(3)).

The claims 4-9,11-12,14-20 are considered to have an inventive step (PCT Article 33(3)) because the document D1 does not disclose partitioning a memory access dependence chain into an upstream stage by assigning a first number of desired upstream nodes to the upstream stage. And further the technical solution in claims 4-9,11-12,14-20 is not obvious to a person skilled on the basis of D1, D2, D3 and D4 or their combination. Thus, claims 4-9,11-12,14-20 have inventive step under PCT Article 33(3).

(3). Industrial Applicability:

Claims 1-20 of the present invention meet the criteria set out in PCT Article 33(4) because they are directed to a method of compiling code that includes partitioning instructions in the code among a plurality of processors. Therefore, the claims 1-20 are considered to be industrially applicable.